Docket No.: W1878.0190

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Masahiko Nakayama

Application No.: 10/631,897 Confirmation No.: 9802

Filed: August 1, 2003 Art Unit: 2193

For: DECIBEL ADJUSTMENT DEVICE WITH SHIFT AMOUNT CONTROL CIRCUIT Examiner: C. D. Ngo

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed more than two months after the Notice of Appeal filed in this case on April 25, 2005, and is in furtherance of said Notice of Appeal.

You are hereby authorized to charge our credit card for the fee of $500.00 required under Section 1.17(f). PTO Form 2038 is attached.

In the event a fee is required or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-2215.

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CONTINGENT EXTENSION REQUEST

If this communication is filed after the shortened statutory time period had elapsed and no separate Petition is enclosed, the Commissioner of Patents and

Trademarks is petitioned, under 37 CFR 1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 CFR 1.135. The fee under 37 CFR 1.17 should be charged to our Deposit Account No. 50-2215.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

NEC Corporation

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There is 1 claim pending in application.

B. Current Status of Claims

1. Claims canceled: 1-4

2. Claims withdrawn from consideration but not canceled: None

3. Claim pending: 5

4. Claims allowed: None

5. Claim rejected: 5

C. Claims On Appeal

The claim on appeal is claim 5

IV. STATUS OF AMENDMENTS

Applicant filed a response After Final Rejection on January 14, 2005, without amending the pending claim. The Examiner responded to the Response After Final Rejection in an Advisory Action mailed March 29, 2005. In the Advisory Action, the Examiner indicated that Applicants' request for reconsideration was considered but did not place the application in condition for allowance.

Accordingly, the claim enclosed herein as Appendix A it the claim that was filed with this application on August 1, 2003.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a decibel level adjustment device for calculating an output signal that is a decibel multiple of an input signal. See paragraph 1. FIG. 5, reproduced below, is a schematic view of a decibel level adjustment device according to the present invention.

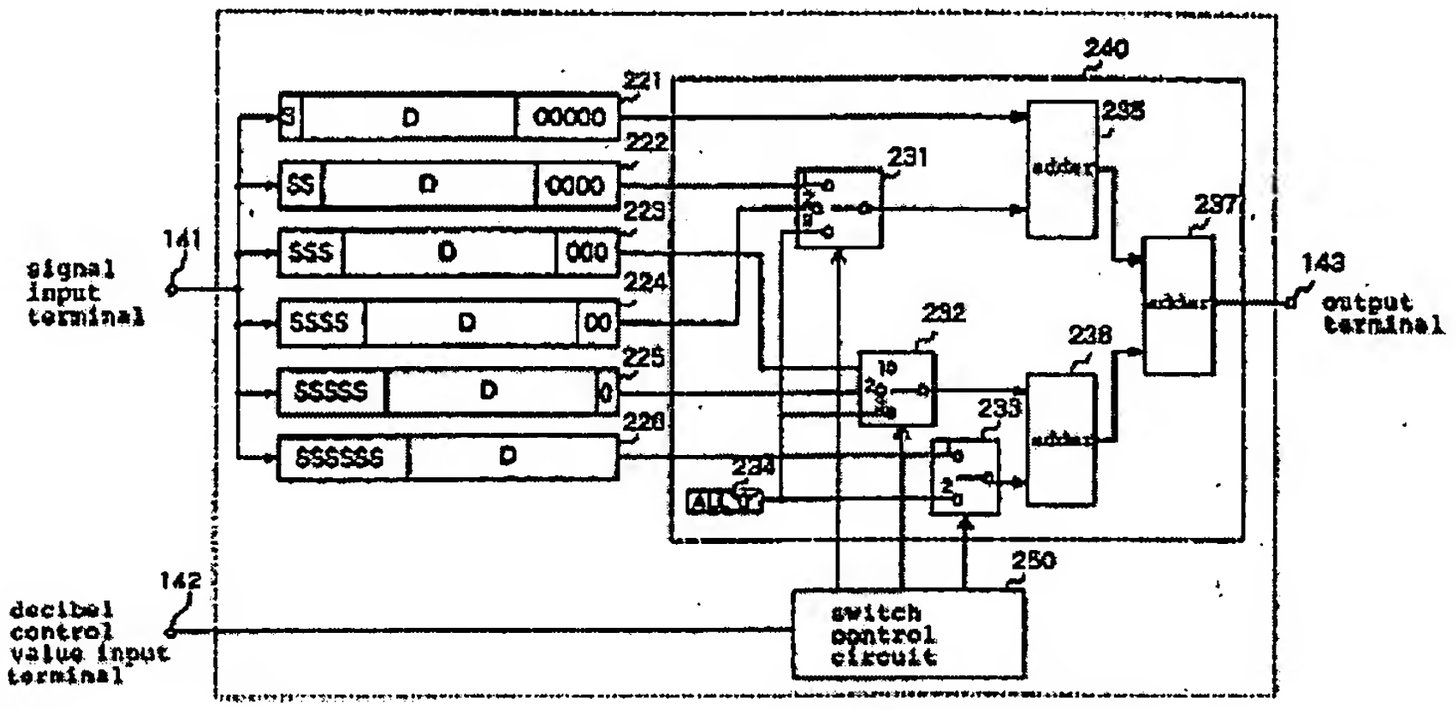
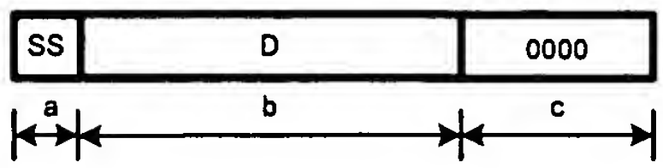


Fig. 5

As shown in FIG. 5, signals expanded to the bit width required for an operation are generated from an input signal using wiring combinations. For example, signal line 222, expands the signal received from input terminal using the format shown below.



As shown, "SS" in block "a" at the most significant bit position is a 2-bit sign code, and "0000" of block c in the least significant bit position is for aligning the bit width when carrying out an operation. Block "b" is the bit width of the received data. This format effectively expands the bit width. The wiring of the device accomplishes the bit

width expansion. Signal paths 221 and 223-226 are similar to signal path 222 except for variations in the most significant and least significant bit positions. See paragraph 61. Using the disclosed circuit, control may be performed in steps of 0.5 dB, 1.0 dB, 1.5 dB or 2 dB, given appropriate control signals and bit of shift amounts. See paragraph 66.

The configuration shown above decreases the number of adders used. Instead of every signal being provided to an adder, switches 231-233 enable selection of only those six bit-expanded signals necessary for converting to the target signal level. In operation, switch control circuit 250 generates switch control signals that control switches 231-233 for applying each of the input signals expanded by bit-shifting exactly the target shift amount to adders 235 and 236. See paragraph 62. For example, for the signal received from input terminal 141 to be multiplied by -3 dB and output to output terminal 143 not every signal is required. Only those signals with a 1-bit shift, 3-bit shift, 4-bit shift, and 6-bit shift are added. Switch control circuit 250 outputs switch control signals such that the input side of switch 231 is connected to the contact 2 side, the input side of switch 232 is connected to the contact 1 side, and the input side of switch 233 is connected to the contact 1 side. See paragraph 63.

When the value of a decibel control value, input at terminal 142, is -5 dB, the input signal is subjected to only a 1-bit shift and a 4-bit shift. Switch control circuit 250 outputs switch control signals such that switch 231 connects to the contact 2 side, switch 232 connects to the contact 3 side, and switch 233 connects to the contact 2 side. At this time, a value of "0" that is generated at circuit 234 is applied to adder 236, whereby all "0" is output from adder 236 and applied to adder 237. As a result, the target operation can be performed and the result output from output terminal 143. Since switch control circuit 250 is adequate if it can generate any switch control signal from a decibel control value, switch control circuit 250 may be constructed from ordinary

components such as selectors or components using logic circuits (a combination of gate logic) or memory. See paragraph 64.

Inserting a barrel shifter between adder 237 and output terminal 143 of this embodiment and performing control to shift output signals that are outputted from adder 237 in accordance with a decibel control value enables the performance of level adjustment over a broader range. See paragraph 65.

VI. GROUNDS OF OBJECTION TO BE REVIEWED ON APPEAL

The rejection of claim 5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,731,851 ("Christopher").

VII. ARGUMENT

Claim 5 is pending in this application. Claim 5 was rejected as being anticipated by Christopher. Applicant asserts that claim 5 is in condition for allowance and any pending rejections should be withdrawn.

A. Introduction

Applicant's independent claims Claim 5 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,731,851 ("Christopher"). Applicant respectfully requests that the Board reconsider and withdraw this rejection.

1. Independent claim 5 is patentable over Christopher.

To anticipate a claim under 35 U.S.C. § 102, the cited reference must disclose every element of the claim, as arranged in the claim, and in sufficient detail to enable one skilled in the art to make and use the anticipated subject matter. See, PPG Industries, Inc. v. Guardian Industries Corp., 75 F.3d 1558, 1566 (Fed. Cir. 1996); C.R.

Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1349 (Fed. Cir. 1998). A reference that does not expressly disclose all of the elements of a claimed invention cannot anticipate unless all of the undisclosed elements are inherently present in the reference. See, Continental Can Co. USA v. Monsanto Co., 942 F.2d 1264, 1268 (Fed. Cir. 1991).

Among the limitations of independent claim 5 not present in the cited reference is a plurality of signal lines arranged parallel to each other for producing in advance signals that are shifted a number of bits necessary for operating on said input signal.

Applicant explicitly recites a plurality of signal lines arranged parallel to each other for producing in advance signals that are shifted a number of bits necessary for operating on said input signal. Thus, Applicant explicitly claims that each of the plurality of signal lines is individually shifted a number of bits.

In Christopher, as shown in Figure 6, a signal 500 is input into coarse gain barrel shifter 501, which shifts the bit significance of the sample bits to effect multiplication or division by powers of 2. The output of the barrel shifter is then input into weighing circuits 504, 506, and 508 which scale the signal provided by the coarse gain block. However, each of the signal lines is not shifted as recited in Applicant's claim. As such, Christopher fails to anticipate Applicant's explicitly claimed invention.

Paragraph 2 of the Office Action asserts that Figure 6 of Christopher shows a plurality of parallel signal lines that are shifted a number of bits as explicitly recited in Applicant's claim. Applicant respectfully disagrees. Figure 6 of Christopher and its associated disclosure show a plurality of parallel lines output from course gain barrel shifter 501 being processed by weighing circuits 504, 506, 508 which are dividers. These dividers do not act on the input signal 500 but a signal 503 already shifted by barrel shifter 501.

Additionally, Applicant explicitly recites switch means for selecting outputs of said plurality of signal lines or all "0". The function associated with Applicant's switch means is to select from among the shifted signal lines or an all "0". Christopher does not disclose this switch means or its explicitly recited function.

In Christopher, control signals C0 and C1 are input into gate 518. Gate 518 controls gating circuit 510, while control signal C1 controls gating circuits 512 and 514. These gating circuits pass the signals from dividers 504, 506, and 508 to summing circuit 516 depending on the control signals C0 and C1. However, there is no switch in Christopher with the function recited in claim 5 for selecting outputs of said plurality of signal lines or all "0".

Applicant has responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

B. Conclusion

In view of the above, the presently pending claim in this application is believed to be in immediate condition for allowance. Accordingly, the Board is respectfully requested to withdraw the outstanding rejection of the claim and to pass this application to issue.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on August 1, 2003, and do not include the amendment(s) filed on January 14, 2005.

IX. EVIDENCE

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

X. RELATED PROCEEDINGS

No related proceedings are referenced in II. above, or copies of decisions in related proceedings are not provided, hence no Appendix is included.

Dated: August 25, 2005

Respectfully submitted,

By _____
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IRB/mgs

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV 451112007 US, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: August 25, 2005 Signature: _____ (Ian R. Blum)

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/631,897

5. A decibel level adjustment device for calculating an output signal which is a d decibel multiple of an input signal, comprising:

a plurality of signal lines arranged parallel to each other for producing in advance signals that are shifted a number of bits necessary for operating on said input signal;

at least one switch means for selecting outputs of said plurality of signal lines or all "0";

a switch control circuit means for receiving the value of said d as a decibel control value and, in accordance with said decibel control value, switching said switch or switches; and

an adder circuit means for adding together the outputs of said switch or switches and output of said signal lines that does not pass by way of said switch or switches.